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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/451,665	11/30/99	YAMAZAKI S	07977/017002

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EXAMINER	
SCHILLINGER,L	
ART UNIT	**PAPER NUMBER**
2813	8

DATE MAILED: 05/09/01

Please find below and/or attached an Office communication concerning this application or pr ceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/451,665	Yamazaki et al
Examiner	**Art Unit**
Laura Schillinger	2813

-- Th MAILING DATE of this communication appears on the cover sh t with th correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Feb 23, 2001

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1, 2, 4, 5, 7-13, 15, 16, 18-23, 25, 26, 28-34, 36, 37, and 39-64 is/are pending in the applica

4a) Of the above, claim(s) 12, 13, 15, 16, 18-21, 33, 34, 36, 37, 39-42, 48-51, an is/are withdrawn from considera

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1, 2, 4, 5, 7-11, 22, 23, 25, 26, 28-32, 43-47, 52-55, and 61-64 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirem

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
18) ☐ Interview Summary (PTO-413) Paper No(s). _____
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

DETAILED ACTION

Election/Restriction

1. Claims 12-22, 33-42, 48-51, and 57-60 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to a non-elected claims. Election was made **without** traverse in Paper No. 7.

Claim Rejections - 35 U.S.C. § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

3. Claims 1-2, 4-5, 7-11, 22-23, 25-26, 28-32, 43-47, 52-55, and 61-64 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Makita ('974).

In reference to claim 1, Makita teaches a method comprising:

forming a crystalline semiconductor film on an insulating surface (Col.14, lines: 35-40);

forming an insulating film on the semiconductor film (Col.14, lines: 35-40);

introducing a dopant (Col.14, lines: 54-60)

annealing the film (Col.15, lines: 1-15);

wherein the peak of a dopant profile is located in the insulating film (Col.14-15, lines: 54-36).

In reference to claim 2, Makita teaches wherein the insulating film is SiO (Col.14, lines: 35-40).

In reference to claim 4, Makita teaches wherein the dopant is B (Col.14, lines: 54-60).

In reference to claim 5 Makita teaches wherein the semiconductor film is polycrystalline Si (Col.14, lines: 35-40).

In reference to claim 7, Makita teaches wherein B is supplied by diborane gas (Col.14, lines: 54-60).

In reference to claim 8, Makita teaches wherein the insulating film is removed (Col.15, lines: 15-20).

In reference to claim 9, Makita teaches wherein the TFT is used in an active display device (Col.1, lines: 15-25).

In reference to claim 10, Makita teaches wherein the device si a shift register with TFTs (Col.1, lines: 15-25).

In reference to claim 11, Makita teaches further comprising laser irradiation (Col.15, lines: 9-15).

In reference to claim 22, Makita teaches a method comprising:

forming a crystalline semiconductor film on an insulating surface (Col.14, lines: 35-40).;

forming an insulating film on the semiconductor film (Col.14, lines: 35-40);

introducing a dopant (Col.14, lines: 54-60);

annealing the film (Col.15, lines: 1-15);

wherein the peak of a dopant profile is located in the insulating film (Col.14-15, lines: 54-36)..

In reference to claim 23, Makita teaches wherein the insulating film is SiO (Col.14, lines: 35-40).

In reference to claim 25, Makita teaches wherein the dopant is B (Col.14, lines: 54-60).

In reference to claim 26 Makita teaches wherein the semiconductor film is polycrystalline Si (Col.14, lines: 35-40).

In reference to claim 28, Makita teaches wherein B is supplied by diborane gas (Col.14, lines: 54-60)..

In reference to claim 29, Makita teaches wherein the insulating film is removed (Col.15, lines: 15-20)..

In reference to claim 30, Makita teaches wherein the TFT is used in an active display device (Col.1, lines: 15-25)..

In reference to claim 31, Makita teaches wherein the device si a shift register with TFTs (Col.1, lines: 15-25).

In reference to claim 32, Makita teaches further comprising laser irradiation (Col.15, lines: 9-15)..

In reference to claim 43, Makita teaches a method comprising:

forming a crystalline semiconductor film to become a channel on an insulating surface (Col.14, lines: 35-40);

forming an insulating film on the semiconductor film (Col.14, lines: 35-40);

introducing a dopant through ion doping (Col.14, lines: 54-60);

annealing the film (Col.15, lines: 1-15);

wherein the peak of a dopant profile is located in the insulating film (Col.14-15, lines: 54-36).

In reference to claim 44, Makita teaches wherein the TFT is used in an active display device (Col.1, lines: 15-25)..

In reference to claim 45, Makita teaches wherein the device si a shift register with TFTs (Col.1, lines: 15-25).

In reference to claim 46, Makita teaches wherein the concentration ranges from 5 x 10(15) to 5 x 10 (17) atoms/cm(3) (Col.14, line:63).

In reference to claim 47, Makita teaches further comprising laser irradiation (Col.15, lines: 9-15).

In reference to claim 52, Makita teaches a method comprising:

forming a crystalline semiconductor film to become a channel on an insulating surface (Col.14, lines: 35-40);;

forming an insulating film on the semiconductor film (Col.14, lines: 35-40);;

introducing a dopant through ion doping (Col.14, lines: 54-60);;

annealing the film (Col.15, lines: 1-15);

wherein the peak of a dopant profile is located in the insulating film (Col.14-15, lines: 54-36)..

In reference to claim 53, Makita teaches wherein the TFT is used in an active display device (Col.1, lines: 15-25)..

In reference to claim 54, Makita teaches wherein the device si a shift register with TFTs (Col.1, lines: 15-25)..

In reference to claim 55, Makita teaches wherein the concentration ranges from 5 x10(15) to 5 x 10 (17) atoms/cm(3)(Col.14, line:63)..

In reference to claim 56, Makita teaches further comprising laser irradiation (Col.15, lines:9-15).

In reference to claim 61, Makita teaches wherein annealing is heating (Col.15, lines:9-15).

In reference to claim 62, Makita teaches wherein annealing is heating (Col.15, lines:9-15).

In reference to claim 63, Makita teaches wherein annealing is heating (Col.15, lines:9-15).

In reference to claim 64, Makita teaches wherein annealing is heating (Col.15, lines:9-15).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Furumura et al ('266, '244, '937) teach a similar method.

Any inquiry concerning this communication from examiner should be directed to Laura Schillinger whose telephone number is (703) 308-6425. The examiner can normally be reached by telephone on Monday to Friday from 6:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Bowers, can be reached on (703) 308-2417. The fax phone number for the group is (703) 308-7722.

LMS

Charles Bowers
Supervisory Patent Examiner
Technology Center 2800

May 4, 2001